clarion
CAR AUDIO & BEYOND

DPX1000.2

Digital

2/1 CHANNEL POWER AMPLIFIER

OPERATION INSTALLATION MANUAL

INTRODUCTION

The Clarion DPX1000.2 is a full-featured two-channel amplifier that. incorporates the following features:

- Digital Technology for high efficiency and high power output.
- Full frequency response with low distortion and exceptional signal to noise performance
- Advanced circuit design that features bridgeable and mixed mode operation for use in various systems, including those with satellite speakers and/or subwoofers
- Variable low-pass electronic crossover with a 12dB or 24db per octave slope and full adjustable range (from 55Hz to 550Hz) to aid in audio system design
- Variable bass boost circuit to reinforce low frequency signals that may be lost due to subwoofer box design
- Adjustable input level controls with ground loop isolation accepting a wide range of input signals
- Remote turn-on with “soft start” muting to prevent turn on “thump”
- Pulse-width modulated (PWM) MOSFET power supply with low AM RFI and protection circuits for overheating and speaker shorts
- 1-ohm load capability to drive a variety of speaker systems (stereo mode)
- Gold-plated input/output connectors
- Aluminum heat sink for efficient heat dissipation
- Low profile, compact size for space limited installations
- Wired remote Sub Level Control (BC2) included
- Full range or low pass output mode
- High level inputs
- Build in Subsonic filter

ABOUT THE MANUAL AND WARRANTY

To start enjoying your new Clarion two-channel amplifier, please read the instructions listed in this manual. Keep all instructions for future reference. Please fill out and send in the enclosed warranty card to protect your purchase and aid in warranty service. Also, **save your original sales receipt as proof of purchase.**

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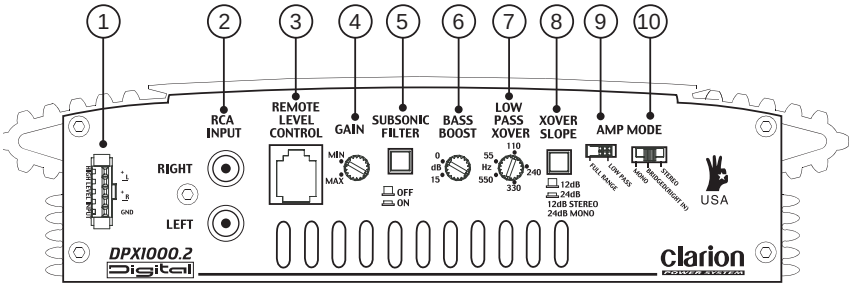
Description • • •

INPUT CONNECTIONS AND AUDIO CONTROLS

The front panel of the DPX1000.2 contains connections for RCA Inputs, Speaker Level Inputs and Audio Controls as shown below.

The RCA Input Connections are gold-plated RCA Jacks and are labeled as RIGHT and LEFT.

Figure 1-



① Speaker Level Inputs
② RCA Input Jacks
③ Remote Sub level Connector
④ Gain Control
⑤ Subsonic Filter Selection Switch
⑥ Bass Boost Control
⑦ Freq (Hz) Selection Control
⑧ X-Over Slope Select Switch
⑨ Output Select Switch
⑩ Input Select Switch

• **Remote Sub level Control** - This port is for the supplied remote gain control that allows adjustment from a remote location .

• **Subsonic Filter** - This switch will activate the Subsonic Filter Circuit which eliminates unwanted frequencies from 24Hz and below.

• **Gain Control** - This allows you to set the nominal operating level of the amplifier. The amplifier's range, 250mV to 2.5V for RCA inputs or 500mV to 5V for speaker level inputs, can accommodate input levels from virtually any brand of source unit.

• **Bass Boost Control**- The amplifier also features a "high-Q" (i.e. narrow frequency band) Bass Boost circuit. It acts much like an equalizer, with adjustable gain (from 0 to +15dB) fixed at 45Hz. Use this feature to tune low-frequency audio response to compensate for a less than ideal subwoofer enclosure design. The added boost produces rich, full bass tones that are normally difficult to reproduce in the car audio environment. Note: If Bass Boost is undesired, set Bass Boost to 0dB.

Low-pass Filter Controls

• **Frequency (Hz) Selection Control** - The crossover frequency is fully adjustable between 55Hz and 550Hz for a wide range of crossover points. Use

this feature, along with your speaker manufacturer's recommended crossover frequencies, to quickly design a more advanced system

• **X-Over Slope Switch** - This switch will change the X-Over between a 12db and 24dB per octave slope. The steep crossover slope keeps midrange tones out of the subwoofer and thereby eliminates an unnatural "nasal" tone quality in the audio system.

• **Output Mode Switch** - This switch is to change the output between lowpass and fullrange. If lowpass is selected, the lowpass filter controls will control the crossover frequency.

• **Input Mode Switch** - This switch allows you to set the input mode. Stereo input allows full left and right stereo operation. Right (bridged) input allows single channel input for bridged operation. This is especially useful in high-powered systems when using one amplifier for each subwoofer/speaker. L + R (sum mono) allows a stereo input to be summed into a mono output.

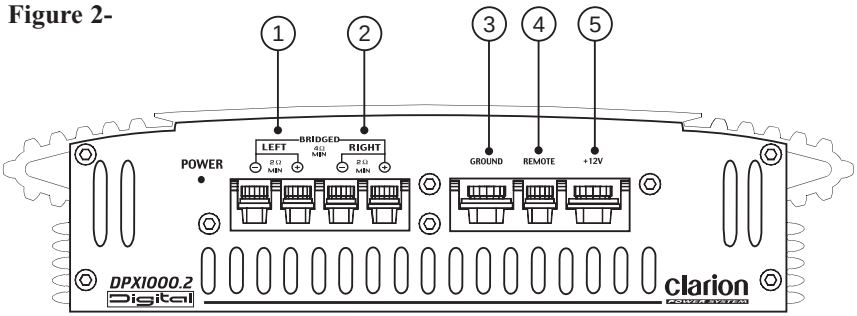
• **Speaker Level Inputs** - These provide connections for a high-level stereo source. In addition, these connections are provided for installations where the source unit's RCA outputs are unavailable.

WARNING: When using the speaker (high-level) inputs, the Black wire must be grounded at the Radio. Failure to do this will result in noise and improper operation.

CONNECTIONS FOR POWER AND SPEAKERS

The rear panel of the DPX1000.2 contains power and speaker connections as shown below.

Figure 2-



① Left Speaker Output
② Right Speaker Output
③ Ground Input
④ Remote Turn-on Input
⑤ Battery + 12v Input

APPLICATIONS

The Clarion DPX1000.2 2-channel car audio amplifier can be used in a variety of system applications. Here are some examples to help plan your own installation.

Bridged- Mono Subwoofer System

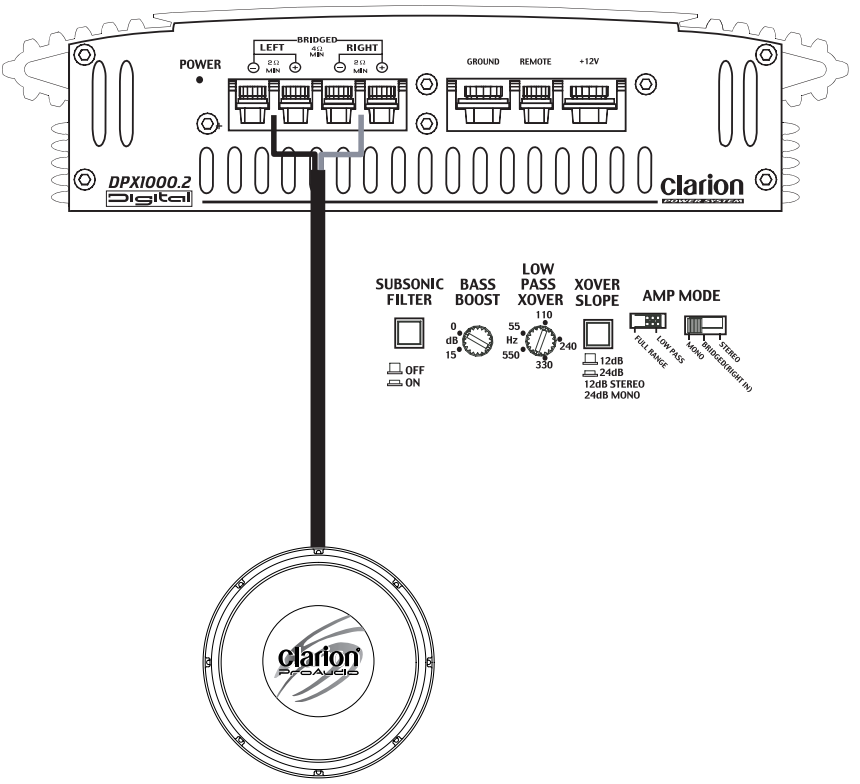


Figure 3 - In this application the amplifier is bridged for mono operation to drive a subwoofer. Minimum load in the bridged mode is 2 ohms.

2-Channel Full-Range, Satellite, or Subwoofer Stereo System

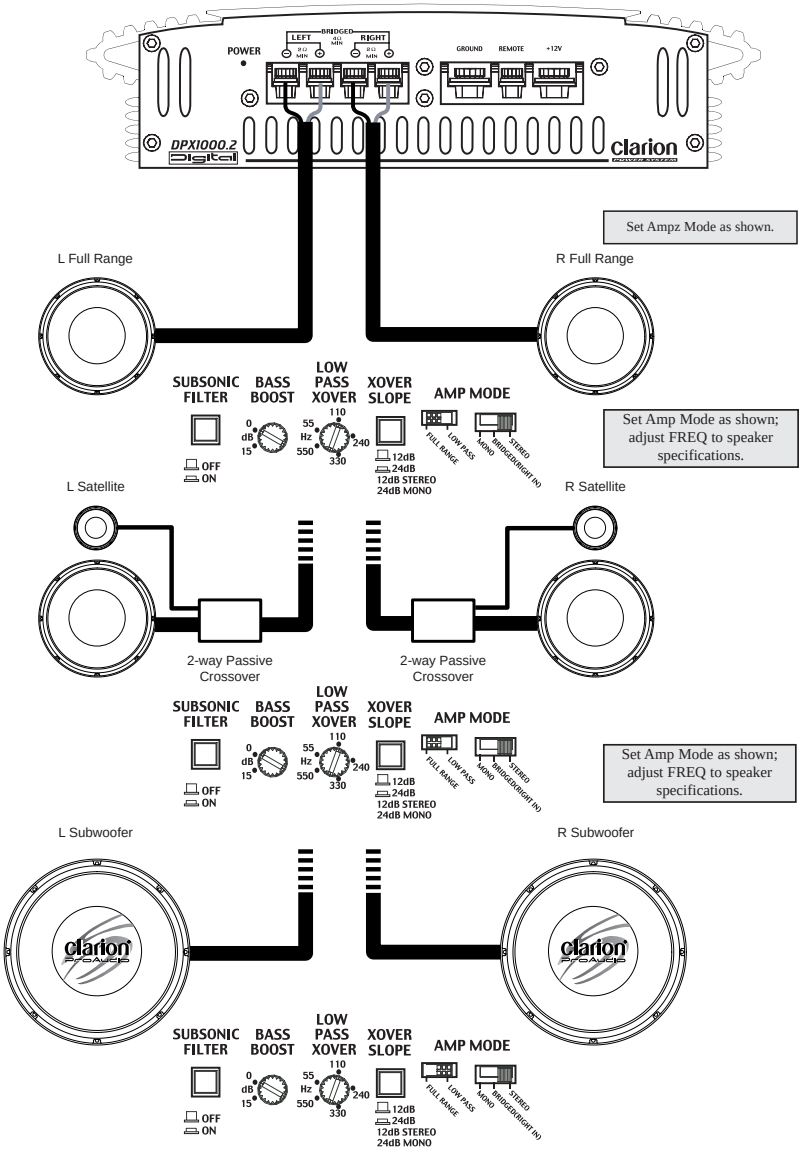
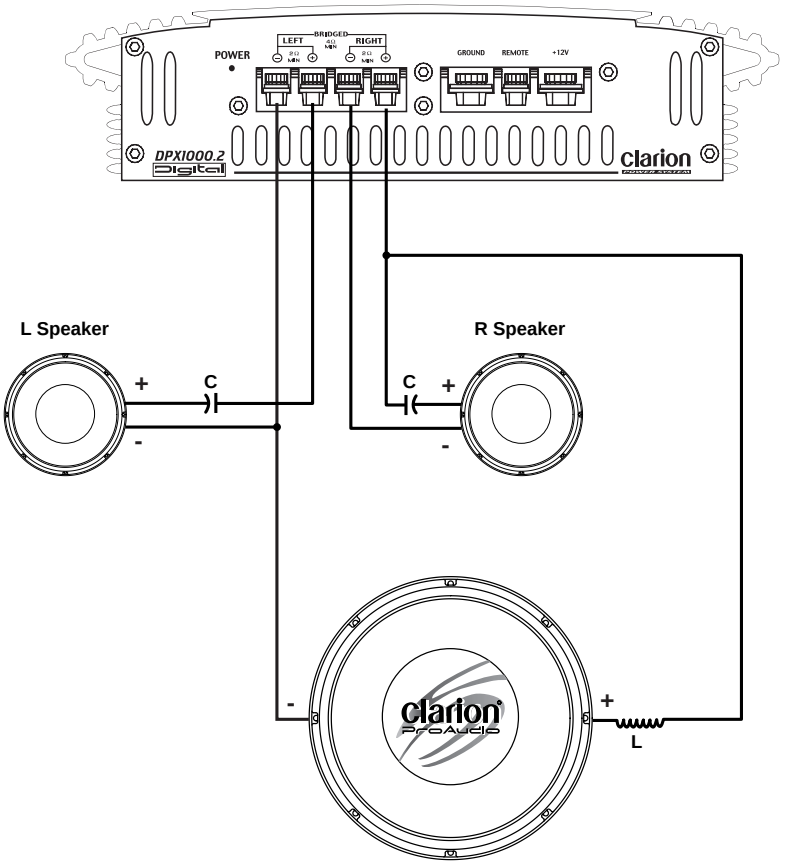


Figure 4 - In this application, the amplifier is used in stereo and drives two full-range (or satellite or subwoofer) speakers. NOTE: A passive crossover must be used with satellite speakers. Minimum load in the stereo mode is 1 ohms.

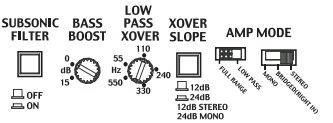
(Set INPUT SELECT Switch to STEREO)

Mixed-Mode Satellite and Subwoofer System



Subwoofer 4 ohms

FREQ (hz)	L (mH)	C (uF)
80	8.0	497
100	6.4	398
125	5.1	318
150	4.2	265
200	3.2	199



Set amp mode switch to fullrange.

NOTE: Chart values based on 4 ohm speakers.

Figure 5 - The amplifier can be configured for a mixed-mode operation. The table provides component values to create a 6dB per octave crossover at specified frequencies. Use components that have a ± 5% tolerance and capacitors rated at 100V. NOTE: Choose the same frequency for both LP and HP crossovers. Do not overlap frequencies, as this may damage the amplifier.

INSTALLATION

This section lists Mounting and Wiring Precautions for installing the Clarion DPX1000.2. These safeguards provide enough detail to successfully complete an installation. If you do not have the necessary skills, Clarion recommends consulting your authorized Clarion dealer for installation.

MOUNTING PRECAUTIONS

Although the Clarion DPX1000.2 incorporate heat sinks and protection circuits, mounting the amplifier in a tight space without any air movement can still damage internal circuitry over time. Choose a site that provides adequate ventilation around the amplifier. For easy system set-up, mount the amplifier so the front panel controls will be accessible after installation.

In addition, observe the following precautions:

1. For the most efficient cooling, mount the amplifier so cool air runs along the length of the fins rather than across them. Remember, any moving air will dissipate heat.

2. Mount the amplifier on a rigid surface. Avoid mounting to subwoofer enclosures or areas prone to vibration. Do not install the amplifier on plastic or other combustible materials.

3. Prior to drilling, make sure proposed mounting holes will not cut into the fuel tank, fuel lines, brake lines (under chassis) or electrical wiring.

WIRING PRECAUTIONS

Read all wiring precautions. If you are not sure of the connections, contact your authorized Clarion dealer.

1. Before installation, make sure the source unit Power switch is in the OFF position.

2. Disconnect the negative (-) lead of the battery before making any power connections.

3. When making connections, be sure that each connection is clean and secure. Insulate final connections with electrical tape or shrink tubing. Failure to do so may damage your equipment.

4. A secure clean ground connection is critical to the performance of your Clarion amplifier. Use the shortest ground wire possible snd securely connect to the car chassis to minimize resistance and avoid noise problems.

5. Add an external fuse on the amplifier's positive (+) power lead and connect it as close as possible to the vehicle's (+) battery terminal. Use a rating that equals the total current consumption at full output of all amplifier in the system. Adding an external fuse will protect the electrical system from short circuits that can cause a fire.

6. Refer to Figure 6 when making electrical connections. Connect the amplifier's positive (+) lead via a fuse directly to the positive (+) terminal on the battery. Do not connect this wire to the car's fuse panel. Use red-insulated 10-gauge (or larger) wire for the amplifier's positive (+) power lead and the same-gauge black-insulated wire for the ground.

7. When replacing the amplifier's fuse, always use one having the same current rating. Substituting a higher-rated fuse or a slow-blow type can result in serious damage to the amplifier.

8. Never ground the speakers to the vehicle chassis or body.

9. Make sure that your vehicle's electrical system (alternator, battery, etc.) is capable of handling the additional load. If you are planning a multi-amplifier system, you may need to add a second battery and possibly upgrade the alternator with a higher-output rated model. Consult your authorized Clarion dealer for recommendations.

10. To avoid noise problems, run the amplifier's positive (+) power lead along one side of the vehicle to the battery. Run the remote turn-on wire and RCA audio cables down the center, and route the speaker wires along the remaining side. If wires must cross, run them perpendicular to each other.

11. When creating passage holes for the power wire, use grommets to eliminate any sharp edges created during drilling. This will protect the wire from being nicked and causing a short circuit.

12. Extra cable can cause signal loss and act as an "antenna" for noise. Use only high-quality RCA cables that are no longer than necessary to make a direct connection with the source unit or equalizer.

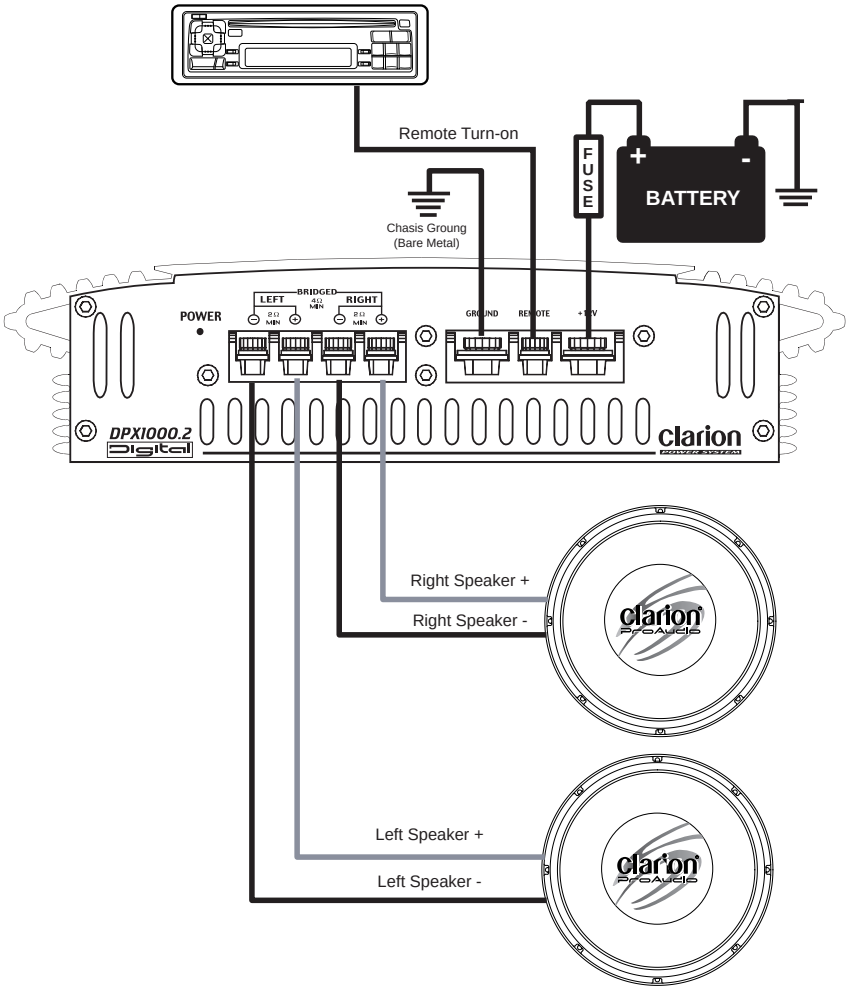


Figure 6. - Electrical connections for the DPX1000.2

SETTING THE GAIN

After completing the installation, follow these steps to set the Gain Control and then perform the Final System Checks.

1. Turn the Gain Control all the way counter-clockwise.

2. Turn the vehicle's Ignition Switch to the ON position. Then turn the ON/OFF Switch on the source units to the ON position. Set all Tone or Equalization Controls to "flat" positions and turn Loudness off.

Note: If the system uses an equalizer, set its frequency controls to "flat" positions.

3. Play a CD or Tape and set the Volume Control at 75% of full level.

4. Slowly increase the Gain Control. Stop when you hear a slight distortion of audio.

SETTING THE CROSSOVER

The Clarion DPX1000.2 features a fully adjustable crossover. To set the crossover, follow these steps.

1. Using the Amp Mode Switch, select the desired mode - Low Pass, or Full Range.

Note: Fullrange selection will disable x-over adjustments.

2. Using the Freq (Hz) Control, select the desired frequency.

SETTING THE BASS BOOST

1. Initially set the Bass Boost control to its full left position (i.e. 0dB).

2. Listen to a variety of music styles (e.g. Rock, Rap, etc.) and slowly increase the Bass Boost control until a noticeable increase in low bass response is perceived.

3. Slowly adjust the Bass Boost control (up or down) to realize the best bass response.

CAUTION: If you hear a "pop" (due to speaker over-excursion), lower the Bass Boost to prevent speaker damage. If the system sounds muddy and distorted (due to amplifier clipping), lower Bass Boost to avoid shutdown from overheating.

FINAL SYSTEM CHECKS

1. Start the engine and turn on the source unit. After a two-second delay, slowly increase the Volume Control and listen to the audio. If you hear any noise, static, distortion or no sound at all, check the connections, and also refer to Troubleshooting. Depending on your system design, the levels may become quite loud even at low Volume Control settings. Until you get an "audio feel" of the system's power, use care when adjusting controls.

2. Turn the Balance Controls to their extreme positions and listen to the results. Audio imaging should match control settings (audio from the left speaker when balance is left).

3. Increase the volume and verify that the amplifier reproduces audio (at full frequencies) without distortion. If you hear distortion, check the connections and verify that the Gain Control is set correctly. Another possibility is damaged speakers or under-powered speakers. Once again refer to Troubleshooting for additional help.

TROUBLESHOOTING

Problem
No Audio.
Solution
Low or no remote turn-on voltage. Check remote connections at amplifier and source unit.

Blown amplifier fuse. Replace with new fast-blow fuse (same rating).

Power wires not connected. Check battery and ground wiring at amplifier; also check battery connections.

Speaker leads shorted. Check speaker continuity to ground, it should not show a common ground.

Speakers not connected or are blown. Check speaker connections at amplifier, measure coil impedance.

Problem
Audio cycles on and off.
Solution
Thermal protection circuits are shutting amplifier off. Check location for adequate ventilation; consult an authorized Clarion Audio Dealer.

Problem
Distorted audio.
Solution
Gain is not set properly, or damaged speaker cones. Review Setting Gain; inspect each speaker cone for signs of damage (i.e. frozen cone, burning smell, etc.)

Problem
Audio lacks punch.
Solution
Speakers wired incorrectly, which causes cancellation of bass frequencies. Check polarity of wires from amplifier to each speaker as defined by the system design.

Problem
Amplifier fuse keeps blowing.
Solution
Incorrect wiring or short circuit. Review Installation and check all wiring connections.

Problem
Whining or ticking noise in the audio with engine on.
Solution
Amplifier is picking up alternator noise or radiated noise. Turn down input gain; move audio cables away from power wires. Check power and ground connections on amplifier; install an in-line noise filter on source unit's power wire; check alternator and/or voltage regulator; test for weak battery or add water to battery

PRODUCT SPECS

	DPX1000.2
Frequency Response	20Hz ~ 20kHz
Signal Noise Ratio	>95db
THD	.2% all channels driven
Input Sensitivity Low Level	250mV ~ 2.5 V
Input Sensitivity Speaker Level	500mV - 5V
Max. Power Output	500 watts x 2 @1 ohm
Cont. Power Output	250 watts x 2 into 4 ohms @ <1% THD
2-Ohm Stereo Output	450 watts x 2 into 2 ohms @ <1% THD
Bridged Power	1000 watts x 1 into 2 ohms @ <1% THD
Dimensions	2 1/8" H x 8 1/4" W x 14" L
Current Consumption at output @ max power	86A @ 1000 Watts

NOTES

Clarion
CAR AUDIO & BEYOND

661 W. Redondo Beach Blvd.
Gardena, CA 90247
1-800-GO-CLARION
www.clarion-usa.com

DPX1000.2-10 Rev.1 (02/01)

Clarion®
CAR AUDIO & BEYOND

Product Registration

for USA and Canada only

IMPORTANT:

1. Detach this section of the card and keep it with your records.
2. Retain your sales receipt to validate warranty service.
3. If you purchased a Clarion ADX Series, Pro Video or Pro Audio product, be sure to complete the box on the last page of this form.

Information on Clarion authorized Warranty Centers
may be obtained by writing Clarion Corporation at the address below
or by calling

1-800-GO-CLARION.

In USA:
Clarion Sales Corporation
Warranty Service Center
661 West Redondo Beach Blvd.
Gardena, CA 90247
(310) 327-9100

In Canada
Clarion Canada, Inc.
Warranty Service Center
2239 Winston Park Drive
Oakville, Ontario L6H 5R1
(416) 829-4600

www.clarionmultimedia.com

Clarion WARRANTY INFORMATION

TEAR THIS PAGE OFF AND KEEP IT WITH YOUR RECEIPT!

Model Number | Serial Number | $ Price Paid (before tax)

Retailer/Dealer Name

Retailer/Dealer Phone w/Area Code | Date Installed: Month Day Year

This product is warranted against all defects in material workmanship for a period of one year from the date of original purchase. The conditions of this warranty and the extent of the responsibility of Clarion Corporation under this warranty are as follows:

1. **PROOF OF DATE OF PURCHASE WILL BE REQUIRED FOR WARRANTY SERVICE OF THIS PRODUCT. INFORMATION ABOUT CLARION AUTHORIZED WARRANTY SERVICE CENTERS MAY ALSO BE OBTAINED BY CONTACTING OR WRITING CLARION CORPORATION AT THE ADDRESS LISTED ON THE FRONT OF THIS CARD.**
2. This warranty will become void if service performed by anyone other than an approved Clarion Warranty Service Center results in damage to product.
3. This warranty does not apply to any product which has been subject to misuse, neglect or accident, or which has had the serial number altered, defaced or removed, or which has been connected, installed, adjusted or repaired, other than in accordance with the instructions furnished by Clarion Corporation.
4. This warranty does not cover car static or other electrical interferences, tape head cleaning or adjustments, or labor costs for the removal or reinstallation of the unit for repair.
5. The sole responsibility of Clarion Corporation under this Warranty shall be limited to the repair or replacement thereof, at the sole discretion of Clarion Corporation.
6. If it becomes necessary to send the product or any defective part to Clarion Corporation or an authorized warranty service station, the product must be shipped in its original carton or equivalent carton, fully insured, with shipping charges prepaid. Clarion Corporation will not assume any responsibility for any loss or damage incurred in shipping.
7. ALL IMPLIED WARRANTIES EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW SHALL HAVE NO GREATER DURATION THAN THE WARRANTY PERIOD SET FORTH ABOVE. UNDER NO CIRCUMSTANCES SHALL CLARION CORPORATION BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT. BECAUSE SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.
8. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.
9. Should you have any difficulties with the performance of this product during warranty, or with any Clarion authorized service centers, you may contact the Clarion National Service Managers at the address listed on the front of this card or call 1-800-GO-CLARION for a listing of Authorized Warranty Service Centers in your area.

Tear at perforation and keep this page with your receipt.

Clarion PRODUCT REGISTRATION CARD

Thank you for selecting a high-quality product from Clarion. We hope you are completely satisfied with your purchase. We'd like to help serve you better by finding out more about your reasons for choosing Clarion. Please take a few moments to fill out the registration information on this card and answer a few questions about yourself and your product. Then, return the card to Clarion within 10 days of purchase. Your answers will be kept strictly confidential. We appreciate your response!

In Canada, place the card in an envelope and mail to:
Clarion Canada, Inc., Warranty Service Center, 2239 Winston Park Drive, Oakville, Ontario L6H 5R1.

Complete this section and mail to Clarion.

1 ☐ Mr. ☐ Ms. ☐ Mrs. ☐ Miss

First Name | M. I. | Last Name

Mailing Address | Apt. No.

City | State/Prov. | Zip/Post Code

Phone w/Area Code | Date of Purchase: Month | Day | Year

2 What Clarion product did you purchase?

Multimedia

1 ☐ Color LCD Display/Control Unit
2 ☐ Color LCD Display
3 ☐ Voice-Activated Navigation System
4 ☐ Video Cassette Player
5 ☐ TV Tuner
6 ☐ Rear Vision Camera
7 ☐ Other _____

Car Audio

8 ☐ AM/FM Cassette
9 ☐ AM/FM CD Player
10 ☐ AM/FM Cassette/CD Player
11 ☐ CD Changer
12 ☐ Equalizer/DSP Processor Module
13 ☐ Amplifier
14 ☐ Speakers

Model Number | Serial Number | $ Price Paid (before tax)

3 What is the name of the store where you purchased this product?

Retailer/Dealer Name

City | State/Prov.

4 What is your age? *(Optional)* 1 ☐☐ **Marital Status?** *(Optional)* 2 ☐ Married 3 ☐ Single

5 Are there any children in your household? 1 ☐ Yes 2 ☐ No

If yes, please specify age range: 3 ☐ 1 - 12 4 ☐ 13 -16 5 ☐ 17 & up

6 What is the highest level of education you have completed?

1 ☐ Some High School
2 ☐ High School Graduate
3 ☐ Some College
4 ☐ Completed College
5 ☐ Some Graduate School
6 ☐ Completed Graduate School
7 ☐ Vocation/Technical School

7 What best describes your primary occupation?

1 ☐ Professional/Technical
2 ☐ Upper Management/Executive
3 ☐ Middle Management
4 ☐ Sales/Marketing
5 ☐ Clerical/Service Worker
6 ☐ Tradesman/Machine Operator/Laborer
7 ☐ Self-Employed/Business Owner
8 ☐ Food Service
9 ☐ Homemaker
10 ☐ Student
11 ☐ Retired
12 ☐ Other

8 What is your annual household income? *(Optional)*

1 ☐ Under $10,000
2 ☐ $10,000 - $19,999
3 ☐ $20,000 - $29,999
4 ☐ $30,000 - $39,999
5 ☐ $40,000 - $49,999
6 ☐ $50,000 - $59,999
7 ☐ $60,000 - $69,999
8 ☐ $70,000 - $79,999
9 ☐ $80,000 - $89,999
10 ☐ $90,000 - $99,999
11 ☐ $100,000 and over

9 Which factors influenced you the MOST in choosing this Clarion Product?

Group A (Please check two)

1 ☐ Newspaper Advertisement
2 ☐ TV Commercial
3 ☐ Radio Commercial
4 ☐ Magazine Advertisement
5 ☐ Recommended by Friend/Family
6 ☐ Clarion Name/Reputation
7 ☐ Recommended by Store Salesperson
8 ☐ On-line Information
9 ☐ Clarion Web Site
10 ☐ Store Display
11 ☐ Special Promotion
12 ☐ Other

Group B (Please check two)

13 ☐ Warranty
14 ☐ Price
15 ☐ Quality/Reliability
16 ☐ Features
17 ☐ Appearance/Design
18 ☐ Ease of Operation
19 ☐ Other

10 What type of music do you listen to most often? (Please check one)

1 ☐ Rock
2 ☐ Jazz
3 ☐ Blues
4 ☐ Pop
5 ☐ Country
6 ☐ Classical
7 ☐ Rap
8 ☐ Rhythm & Blues
9 ☐ Reggae
10 ☐ New Age
11 ☐ Easy Listening
12 ☐ Alternative

11 Which of the following products/services do you own or intend to buy within the next 18 months?

	Own	Intend to buy		Own	Intend to buy
Home Desktop PC	1 ☐	9 ☐	Satellite System/Service	17 ☐	24 ☐
Laptop Computer	2 ☐	10 ☐	Cellular Telephone	18 ☐	25 ☐
Color Monitor	3 ☐	11 ☐	Pager	19 ☐	26 ☐
CD-ROM	4 ☐	12 ☐	Call Waiting	20 ☐	27 ☐
Computer Speakers	5 ☐	13 ☐	Karaoke	21 ☐	28 ☐
Color Printer	6 ☐	14 ☐	Vehicle Navigation System	22 ☐	29 ☐
Modem	7 ☐	15 ☐	Vehicle Security System	23 ☐	30 ☐
Large Screen TV (35" or larger)	8 ☐	16 ☐			

12 Is this your first Clarion purchase?

1 ☐ 1st purchase 2 ☐ 2nd purchase 3 ☐ 3rd or more

13 What type of computer do you own?

1 ☐ IBM PC or Clone 2 ☐ Macintosh or Clone 3 ☐ Do Not Own

14 Which on-line service/network do you subscribe to?

1 ☐ America Online 4 ☐ MSN 7 ☐ Other

2 ☐ CompuServe 5 ☐ Internet 8 ☐ Do not have service/access

3 ☐ GEnie 6 ☐ Prodigy

Please tape closed along this edge. DO NOT STAPLE.

POWER SYSTEM AMPLIFIER AND PROCESSOR WARRANTY INFORMATION

Clarion offers two-year warranty coverage on Power System Ampifiers and Power System Processors ONLY if the product is installed at the same location where purchased. If not installed by the autorized dealer, a one-year warranty coverage is provided.

To obtain two-year warranty coverage on your Clarion Power System Amplifier or Processor, complete this section in full and return it along with a copy of your receipt and the attached product registration information in an envelope addressed to:

Clarion Sales Corporation
P.O. Box 863
Brea, CA 92822-0863

Retailer/Dealer Name

Retailer/Dealer Address

City State/Prov. Zip/Post Code

Retailer/Dealer Phone w/Area Code Date Installed: Month Day Year

TWO-YEAR WARRANTY NOT VALID UNLESS THE SECTION ABOVE IS COMPLETED IN FULL AND RETURNED WITH A COPY OF YOUR RECEIPT.

Clarion®
CAR AUDIO & BEYOND

PLEASE PLACE
FIRST-CLASS STAMP
HERE
(Post Office will not deliver
without proper postage.)

CLARION SALES CORPORATION
PO BOX 863
BREA CA 92822-0863